DISCLAIMER

- These slides are shared as a resource for healthcare providers on 3/13/20, but **please note that all information is subject to change at any given point.**
- For most updated guidance, resources, and recommendations, please see the LACDPH COVID-19 website:
  - http://publichealth.lacounty.gov/acd/nCorona2019.htm
- And join LAHAN, the Los Angeles County Health Alert Network

Visit: www.publichealth.lacounty.gov/lahan
Text: the word **'LAHAN'** to **66866**

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Clinical Update:
Coronavirus Disease 2019

March 13, 2020

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Disclosures

There is no commercial support for today's webinar

Neither the speakers nor planners for today's webinar have disclosed any financial interests related to the content of the meeting

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DISCLAIMER

- This is a rapidly evolving situation so the information being presented is current as of today (3/13/20) so we highly recommend that if you have questions after today you utilize the resources that we will review at the end of this presentation.

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Clinical Update II
Coronavirus Disease 2019

Zachary Rubin, MD
Chief, Healthcare Outreach Unit

Prabhu Gounder, MD, MPH, FACP
Medical Director, Respiratory Disease Unit

Acute Communicable Disease Control Program
Los Angeles County, Department of Public Health

Dr. Rubin and Dr. Gounder are both Medical Epidemiologists and are part of the LAC DPH team overseeing the local response to Coronavirus Disease 2019.

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Overview of Presentation

- Current COVID-19 situation
- Update clinical characteristics
- Local recommendations for COVID-19 diagnostic testing
- Infection Control Update
- HCW exposure management
- Pandemic surge planning

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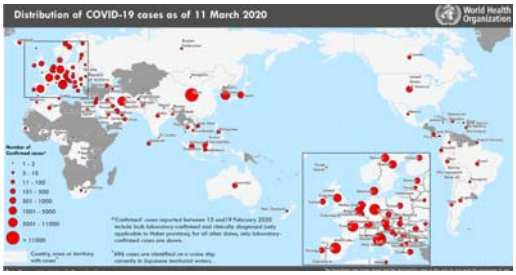
Coronavirus COVID-19 Global Cases by WHO



- 118,326 total cases
  - 80,955 confirmed cases in China
  - 37,371 cases outside China

https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200304-sitrep-44-covid-19.pdf?sfvrsn=783b4c9d_6

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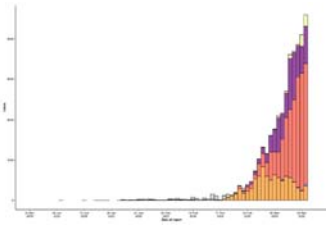
COVID-19 spread outside China

Country	Confirmed Cases
South Korea	7,755
Italy	10,149
Iran	8,042
Japan	568
France	1,774
US	1,670
Germany	1,296

COVID-19 Infections outside China



https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200304-sitrep-44-covid-19.pdf?sfvrsn=783b4c9d_6

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LA County 3/12/20

- First case in LAC identified January 22
- 32 cases in LAC to date
  - 1 death
  - 4 community transmission

California 3/11/20

- 198 Positive cases
  - 4 deaths
  - 44 community transmission

https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/COVID-19/CACommunityTransmissionbyCounty03.09.2020.pdf

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Update Clinical Characteristics

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Current data on COVID-19: Infectiousness

- Probably about as infectious as SARS
  - R_0 estimates: 2.2-4.2
    - Lipsitch et al. Science. 2003; Riley et al. Science 2003; Wallinga & Teunis. AJE. 2004
- More infectious than influenza
  - R_0 estimates pandemic flu: 1.5-1.8
  - R_0 estimate for seasonal flu: 1.3
    - Biggerstaff et al. BMC ID. 2014
- R_0 estimates for COVID-19:
  - 2.2 (95% CI: 1.4-3.9)
    - Early disease reporting data (Li et al. NEJM. 2020)
  - 2.24 (95% CI: 1.96-2.55)
    - When assuming 8-fold increase in reporting rate
  - 3.58 (95% CI: 2.89-4.39)
    - When assuming 2-fold increase in reporting rate
    - Modeling paper using data from Jan 10-24th in China (Zhao et al. International Journal of Infectious Diseases, 2020)
  - 2.8-3.9
    - Modeling paper using data before 1/26 in China (Zhou et al. Journal of Evidenced Based Medicine. 2020)

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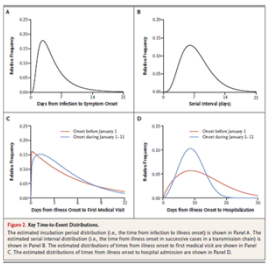
Current data on COVID-19: Incubation Period

- Most likely 2-14 days (CDC)
  - 5.1 days
    - Chan et al. Lancet. 2020
  - 5.2 days (95% CI: 4.1-7.0)
    - Li et al. NEJM. 2020
- Similar to SARS, which was 6.4 days (5.2-7.7 days)
  - Donnelly et al. Lancet. 2003
- Serial interval (onset-to-onset): 7.5 days (95% CI: 5.3-19 days)
  - Li et al. NEJM. 2020



Li et al. Early Transmission Dynamics in Wuhan, China of Novel Coronavirus–Infected Pneumonia. NEJM. 2020

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Current data on COVID-19: Severity

- Case Fatality Rate: between 2-4% in Hubei province
  - Lower than SARS (9-10%) or MERS (~34%)
  - Higher than seasonal influenza (0.1%-0.2% among symptomatic cases)
    - https://www.cdc.gov/flu/about/burden/past-seasons.html
  - Possibly similar to 1918 pandemic influenza (2-3%)
    - Taubenberger et al. EID. 2006
- Study of 72,000 COVID-19 cases in China; of ~45K (62%) lab-confirmed:
  - 2.3% fatal (Severity: 81% mild disease; 14% severe disease; 5% critically ill)
    - Fatality higher among those with preexisting conditions: 10.5% CVD; 7.3% DM; 6.3% chronic respiratory disease; 6% HTN; 5.6% cancer
    - Fatality higher among elderly: 14.8% among ≥80y; 8% among 70-79y
    - Wu et al. JAMA 2020
  - Age: Only 2% of cases were <20 years of age
  - HCW: 3.8% of confirmed cases, including 5 deaths

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Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study

Fei Zhou*, Ting Yu*, Ronghui Du*, Guohui Fan*, Ying Liu*, Zhibo Liu*, Jie Xiang*, Yeming Wang, Bin Song, Xiaoying Gu, Lulu Guan, Yuan Wei, Hui Li, Xudong Wu, Jiuyang Xu, Shengjin Tu, Yi Zhang, Hua Chen, Bin Cao

- 191 patients admitted to 2 hospitals in Wuhan
- Included all inpatients through Jan 31, 2020
  - 135 survived
  - 56 died

Factors Associated with Mortality		
	Adjusted OR	95% CI
Age (1 year increase)	1.10	1.03-1.17
SOFA score	5.65	2.61-12.23
D-Dimer (>1 vs <0.5 mcg/L)	18.42	2.64-128.55

www.thelancet.com Published online March 9, 2020 https://doi.org/10.1016/S0140-6736(20)30566-3

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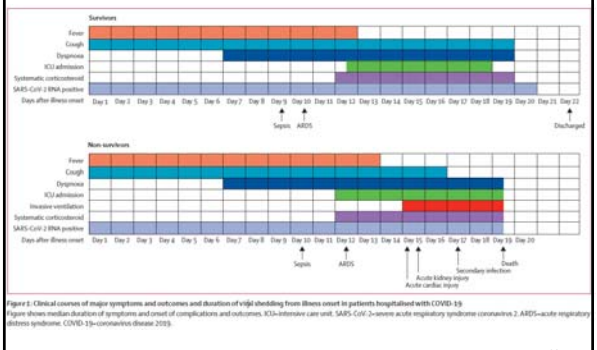

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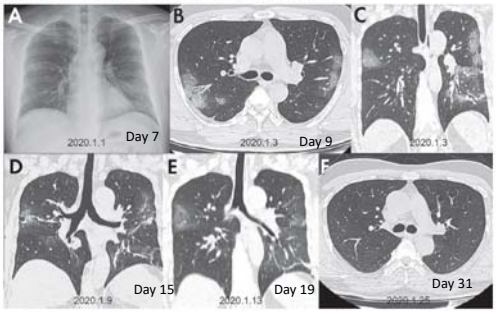
COVID-19 Radiographic Features



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Local Recommendations for COVID-19 Diagnostic Testing

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Considerations for Developing Local Testing Recommendations

- Will testing change clinical management?
- Is testing done to inform a public health response?
- Is a timely result necessary?
- What is current epidemiologic situation?
  - Limited versus widespread community transmission
- Where to test?
  - LA County Public Health Laboratory (PHL)
  - Commercial clinical laboratory
- Current testing capacity
  - Shortage of reagents for testing

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Current Situation: Limited Community Transmission

- Test if indicated by exposure history
  - Close contact to a confirmed case
  - History of travel to a region with ongoing transmission
- Test if no alternative diagnosis (e.g. negative molecular respiratory panel)
  - Coinfections are less likely
- Test healthcare workers and in healthcare settings
  - Inform infection control and outbreak response
- Potentially lower yield in absence of exposure or clinically compatible symptoms

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Criteria for Sending Specimen to PHL

Clinical Features		Epidemiologic Risk Factors
Fever **or** signs/symptoms of lower respiratory illness (e.g. cough, shortness of breath)	and	Any person (including healthcare workers) who in the last 14 days before symptom onset has had close contact with a suspect of laboratory-confirmed COVID-19 patient
Fever **and** signs/symptoms of lower respiratory illness (e.g. cough, shortness of breath)	and	Any healthcare worker without an alternative diagnosis (e.g., negative molecular respiratory panel)
Fever **and** signs/symptoms of a community-acquired lower respiratory illness (e.g. cough or shortness of breath) **requiring hospitalization**	and	A history of travel from affected geographic areas* in the last 14 days before symptom onset -or- radiographic findings compatible with a viral pneumonia and no alternative diagnosis
Part of a cluster of 2 or more cases of an acute respiratory illness within a 72-hour period	and	Congregate living setting with a large proportion of older adults and persons with comorbid medical conditions (e.g. skilled-nursing facility, senior assisted-living facility, homeless shelters)

- Turnaround time ~2 business days (depending on volume and capacity)

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Recommended for Testing at a Commercial Laboratory

Patients with fever and cough/shortness of breath not requiring hospitalization who have:

- History of travel from affected geographic areas (domestic or international) within 14 days of their symptom onset
- Other exposure risk as indicated by the patient's history and clinical judgement (and who do not have an alternative diagnosis (e.g., negative rapid influenza test).

- Turnaround time ~3-4 days
- Slightly longer time to get result unlikely to change management for these patients

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Future Situation: Widespread Community Transmission

These additional testing strategies will be recommended, by laboratory:
Testing through PHL:

- Persons associated with acute respiratory illness outbreaks in non-healthcare congregate settings (e.g, schools and dormitories)

Testing through clinical laboratories:

- older adults (age ≥ 65 years)
- individuals with chronic medical conditions and/or an immunocompromised state that may put them at higher risk for poor outcomes (e.g., diabetes, heart disease, receiving immunosuppressive medications, chronic lung disease, chronic kidney disease).

- Consider not testing people with mild illness and without risk factors for severe disease
  - Will not change clinical management
  - Provide routine home care instructions for mild viral respiratory illness

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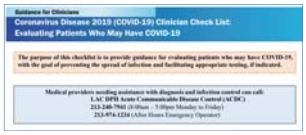
COVID-19 Diagnostic Testing Can be Done in Ambulatory Setting!

- Do not send to an ER for sole purpose of specimen collection
  - Unnecessary exposure of other patients and staff
- Follow recommended infection control procedures
- Review the DPH Provider Checklist for instructions on specimen collection
- Have a plan for specimen shipping and handling



Check list available at: http://publichealth.lacounty.gov/acd/ncorona2019/index.htm

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Other Considerations for Testing

- Patients should be presumed infectious
- Healthcare workers who care for a patient with suspected COVID-19 advised to self-monitor for symptoms
  - Regardless of specimen collection
- Patients advised to self-isolate pending a negative test result
- Additional resources available on DPH provider website

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Infection Control Update

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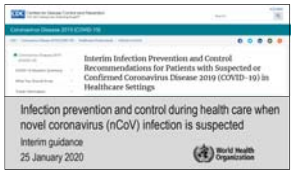
LAC DPH Health Advisory:
Coronavirus Disease 2019 Testing and Revised Infection Prevention Guidance
March 11, 2020

- LACDPH follows CDC, WHO guidance and recommends the following for **routine care** of suspect or confirmed COVID-19:
  - Standard precautions
  - Droplet precautions
  - Contact precautions
  - Eye protection
- Regular room w door closed



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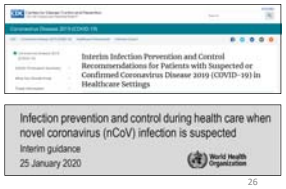
LAHAN

LAC DPH Health Advisory:
Coronavirus Disease 2019 Testing and Revised Infection Prevention Guidance
March 11, 2020

- LACDPH follows CDC, WHO guidance and recommends the following for **high-risk aerosol-generating procedures** of suspect or confirmed COVID-19:
  - Standard precautions
  - Airborne precautions
  - Contact precautions
  - Eye protection
- Airborne infection isolation room



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Other recommendations

- Limit visitation in healthcare facilities
  - Restrict routine visitation
  - Screen visitors for fever, URI symptoms
  - Consider barring visitation except for specific situations
    - Pediatrics
    - End-of-life
    - Case-by-case basis
  - Restrict non-essential workers from hospitals (i.e. painters, pet therapy, etc).
- Hospitals should develop technological solutions for
- Limit patient movement within hospital

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HCW exposure management

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Healthcare worker monitoring

- CDC guidance from 3/7/20 update[1]
- LACDPH companion document[2]
  - All HCP should self-monitor for possible symptoms of COVID-19 2x per day, before work
  - If HCP have symptoms, they should stay home from work.
  - Healthcare facilities (HCF) should screen all HCP prior to working their shifts. HCP with fever should be sent home.
  - Facilities should review their policies on work absenteeism.
  - HCP who have mild respiratory symptoms (sore throat, runny nose, etc) **without fever** may work. Consider having those HCP wear a surgical mask. Consider reassigning those HCPs responsibilities to exclude patient care.

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Healthcare worker exclusion in setting of critical reduction in workforce

- Per CDC:
  - Consider allowing asymptomatic HCP who have had an exposure to a COVID-19 patient to continue to work after options to improve staffing have been exhausted and in consultation with their occupational health program.
  - These HCP should still report temperature and absence of symptoms each day prior to starting work.
  - Facilities could have exposed HCP wear a facemask while at work for the 14 days after the exposure event if there is a sufficient supply of facemasks.

1.https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html

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Pandemic surge implementation

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Modeling the surge in LA County

- Data from Wuhan:
  - 20% of cases require hospitalization
  - 5% require ICU level care
- With an outbreak of 100,000 people
  - 20,000 people require hospitalization
  - 5,000 people require ICU level care
- Current capacity in LAC
  - 23,300 Hospital beds in LAC
  - 2200 ICU beds in LAC

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Community providers—you can make a difference

- Do not send patients with mild illness for testing.
- Do not send patients with mild illness to the ED.
- Proactively reach out to patients to avoid going to hospital unless they require hospital care.
- Develop telemedicine programs to treat the mildly ill and worried well.

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Community spread is here…

- Staffing
  - Recommend screening HCW for signs and symptoms of COVID-19 before shift.
  - Develop screening processes that do not disrupt care (thermal scanner, TempaDot, etc.)
  - Educate HCW on COVID-19 and send home if symptomatic.
  - Look at alternate staffing sources to supplement.

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Increase bed capacity

- Consider limiting or stopping elective surgical procedures.
- Ready flex applications to regulatory agencies for additional beds.
- Consider closing limiting care at outpatient departments and diverting staff and PPE to hospital to care for patients.

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Questions

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- **Los Angeles County Department of Public Health**
  For Health Professionals: http://publichealth.lacounty.gov/acd/nCorona2019.htm
  For the public, schools, media, & others: http://publichealth.lacounty.gov/media/Coronavirus/
- **California Department of Public Health**
  https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/nCOV2019.aspx
- **Centers for Disease Control and Prevention**
  http://www.cdc.gov/coronavirus/novel-coronavirus-2019.html
- **World Health Organization**
  https://www.who.int/health-topics/coronavirus

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To obtain a CME certificate or certificate of attendance, complete the Survey Monkey evaluation.

The link is on the webinar homepage
http://publichealth.lacounty.gov/cme/CoVWebinar/

- This link will also be in an email that you will receive at 2pm today
- You should receive your certificate within a week

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